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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/542,934

07/21/2005

Hiroshi Akaba

SHG-16197

9164

40854 7590 10/28/2009
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EXAMINER

WILHELM, TIMOTHY

ART UNIT

PAPER NUMBER

3616

MAIL DATE

DELIVERY MODE

10/28/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/542,934	Applicant(s) AKABA ET AL.	
	Examiner Timothy D. Wilhelm	Art Unit 3616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-8 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-8, and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/11/2009 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1,4,5,8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-302026 in view of JP 2000-006759, and further in view of Midorikawa (US 6,332,629 B1) and Eiji (JP 2000-225921).

JP 2002-302026 discloses a travel safety device for a vehicle comprising:

an object detecting unit which detects an object existing in a traveling direction of the vehicle (6, Pg. 4, Line 26 of supplied translation);

a correlation calculating unit which calculates a correlation involving a distance between the vehicle and the object based on a detection result of the object detecting unit (ECU 1);

a safety unit including an automatic brake unit which automatically decelerates the vehicle (14); and

a safety device operation control unit (Pg. 7, Para. 0023) which determines a possibility of contact between the vehicle and the object based on the correlation calculated by the correlation calculating unit, and when it is predicted that there is a possibility of contact simultaneously actuates the automatic brake unit,

wherein the automatic brake unit is constructed so as to be capable of decelerating the vehicle in a plurality of different deceleration patterns (Fig. 4, Pg. 3, Para. 0008),

wherein the safety device operation control unit is constructed so that, when the distance between the vehicle and the object enters a predetermined range based on the correlation calculated by the correlation calculating unit, the automatic brake unit causes generation of a deceleration to a degree, which is capable of allowing the occupant to recognize that a braking force has been generated (braking device causes vibration to alert the driver).

4. JP 2002-302026 discloses the use of additional warnings (display 11 or loudspeaker 12) that occur at the same time (simultaneously) with the automatic brake unit (Fig. 4), so as to provide additional means to warn the driver at the same time as

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slowing down the vehicle (Pg. 7, Lines 4-7 of translation supplied by applicant). JP 2002-302026 doesn't particularly teach the use of a seatbelt warning means to warn the driver (instead of or in addition to said display (11) warning and/or loudspeaker (12) warning). Nevertheless, use of a simultaneous seatbelt warning means, in addition to the brake warning means (and also in addition to, or instead of the display 11 and/or loudspeaker 12), to warn the driver would have been obvious so as to provide another means to increase the awareness of a driver and to help avoid the occurrence of an accident. In other words, it would be obvious to provide an additional means to alert the driver to a dangerous condition, since it is generally desirable to provide more rather than less safety devices and more warning of dangerous events, such that the driver would be even more likely to be alerted to a dangerous condition.

5. JP 2000-006759 discloses the use of a safety unit having seatbelt unit which automatically tightens the seat belt and releases the tightening thereof (Abstract, see discussion of winding and extraction). Moreover, JP 2000-006759 teaches that said seatbelt device is constructed so as to be capable of tightening and releasing the seatbelt in a plurality of different operation patterns (Abstract, see discussion of fastening force and pattern being continuously changed), for the purpose of warning a driver, when the vehicle and an object have entered a predetermined range (Abstract, see discussion of giving warning to occupant and arise attention).

6. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified JP 2002-302026, to utilize -- in addition to the above discussed automatic brake unit -- in view of the teachings of JP 2000-006759, a

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seatbelt device, that automatically tightens and releases tightening thereof, which is simultaneously activated with said brake unit and provides the capability of being tightened and released in a plurality of different operation patterns, wherein said seat belt device tightens and releases the seatbelt, in addition to said brake device of JP 2002-302026, when a vehicle and an object enter a predetermined range, so as to help alert / warn the driver (should they not realize and/or properly interpret the brake vibration warning), while also providing a means to help restrain the driver. Thus, achieving the desirable result of better protecting the occupant by giving an additional warning and protection means, thereby helping improve safety of the occupant as well as the safety of others using the travel surface and/or near the travel surface.

7. JP 2002-302026 and JP 2000-006759 both fail to disclose the period of tightening of the seatbelt as set to be longer than a period of releasing of the seatbelt. Midorikawa discloses an automotive passenger restraint and protection apparatus comprising a seatbelt; a motor 110 able to protract or retract the seatbelt; a controller 200D for the motor 110; and a danger degree determining and prediction means 415 that can signal to the controller 200D of the motor 110 if a collision danger status has been predicted; wherein if the collision danger status has been set, the seatbelt is alternately protracted and retracted (referred to as a vibration pattern) to warn the vehicle driver. The system further comprises a vibration pattern setting unit 444 that enables the passenger of the vehicle to set the vibration pattern of the seatbelt device to increase the retraction time per cycle of the vibration pattern, thus prolonging the period of tightening, or retracting, of the seatbelt to be longer than that of releasing, or

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protracting, of the seatbelt. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the seatbelt system of JP 2002-302026 and JP 2000-006759 with the teaching of Midorikawa's adjustable vibration pattern to allow for the user to customize the vibration pattern to be more recognizable to each individual passenger, thus increasing the probability of success for the collision warning system.

8. JP 2002-302026, JP 2000-006759, and Midorikawa further fail to disclose the correlation unit as detecting whether an object is mobile or stationary and subsequently tightening the tension of the seatbelt to be greater when there is a possibility of contact with a mobile object than a tightening tension which is set when there is a possibility of contact with a stationary object. Eiji teaches an occupant restraint and protection device and its setting system comprising a seatbelt and a winding system 10 for winding the seatbelt, and an obstacle detection system wherein the seatbelt winding device 10 performs has the function to perform control of the rolling-up torque of the seatbelt based on the determination of an external obstacle, during which time the winding device is operated on the basis whether said obstacle is mobile, such as another vehicle, or stationary, such as a wall, at which point, should the obstacle be mobile, the winding device winds the seatbelt to a tighter tension than when the obstacle is determined to be stationary (Pg. 8, paragraph 30). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the safety system of JP 2002-302026, JP 2000-006759, and Midorikawa with the teaching of Eiji such that the correlation unit determines whether an obstacle is station or mobile and

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the winding of the seatbelt is adjusted to wind tighter should the obstacle be mobile to better warn a driver when a vehicle collision is about to occur with another vehicle.

9. With respect to claim 4, the combination of JP 2002-302026 in view of JP 2000-006759 further discloses that wherein the safety device operation control unit is constructed so that an even higher degree of deceleration is generated by the automatic brake unit if such a state is maintained for a predetermined period of time, where the distance between the vehicle and the object enters a predetermined range based on of the correlation calculated by the correlation calculating unit (Compare Figs. 2-4 of JP 2002-302026 – note in particular that Figs. 4(a) and 4(b) disclose increased braking in 4(b)).

10. Regarding claim 5, the combination of JP 2002-302026 in view of JP 2000-006759 further discloses that the safety device operation control unit is constructed so that, if such a state is maintained for a predetermined period of time, where the distance between the vehicle and the object enters a predetermined range on the basis of the correlation calculated by the correlation calculating unit, the seatbelt device causes the seatbelt to be fixed in its stopped state for at least a predetermined period of time after the seatbelt is tightened (note that Fig. 5 of JP 2000-006759 shows that force is applied intermittently, as such seat belt is considered in stopped state at point where belt reaches maximum tightness, just before force it is let out, in other words it is in a stopped state for at least an instant).

11. With respect to claim 8, the combination of JP 2002-302026 in view of JP 2000-006759 further discloses an in-vehicle LAN, wherein the correlation calculating unit, a

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brake control unit which controls the automatic brake unit and an electric seatbelt control unit which controls the seatbelt device are connected to a connection bus of the in-vehicle LAN (the combination results in a LAN as it forms a network).

12. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of JP 2002-302026 in view of JP 2000-006759 and Midorikawa as applied to claims 1, 4-5, and 8-9 above, and further in view of Midorikawa (GB 2,373,220 A).

With respect to claim 6, the combination of JP 2002-302026, JP 2000-006759, and Midorikawa does not specifically further disclose the use of a braking operation detecting unit which detects a braking operation carried out by a driver; and a vehicle speed detecting unit which detects the speed of vehicle, wherein the safety device operation control unit is constructed so that fixing of the seatbelt in its stopped state by the seatbelt device is released in at least one of the states where it is detected on the basis of a detection result of the braking operation detecting unit that a braking operation is released after the braking operation is carried out by a driver and where it is detected on the basis of a detection result of the vehicle speed detecting unit that the vehicle stops. Midorikawa ('220) discloses a braking operation detecting unit which detects a braking operation carried out by a driver (Fig. 44, Element 91); and a vehicle speed detecting unit (90) which detects the speed of vehicle, wherein the safety device operation control unit is constructed so that fixing of the seatbelt in its stopped state by the seatbelt device is released in at least one of the states where it is detected on the basis of a detection result of the braking operation detecting unit that a braking operation is released after the braking operation is carried out by a driver and where it is

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detected on the basis of a detection result of the vehicle speed detecting unit that the vehicle stops (Pg. 96, Lines 30-35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the combination of JP 2002-302026, JP 2000-006759, and Midorikawa to utilize a braking operation detecting unit which detects a braking operation carried out by a driver; and a vehicle speed detecting unit which detects the speed of vehicle, wherein the safety device operation control unit is constructed so that fixing of the seatbelt in its stopped state by the seatbelt device is released in at least one of the states where it is detected on the basis of a detection result of the braking operation detecting unit that a braking operation is released after the braking operation is carried out by a driver and where it is detected on the basis of a detection result of the vehicle speed detecting unit that the vehicle stops, in view of the teachings of Midorikawa ('220), so as to achieve the desirable result of using a known and predictable means to reliably anticipate a dangerous driving condition.

13. The combination of JP 2002-302026, JP 2000-006759, and Midorikawa, further in view of Midorikawa ('220) further discloses a braking operation detecting unit which detects a braking operation carried out by a driver, wherein the safety device operation control unit is constructed so that, on the basis of a braking operation detected by the braking operation detecting unit, it determines whether there is a possibility of a contact between the vehicle and the object, and increases a tightening tension of the seatbelt by the seatbelt device in a case in which it is predicted based on a braking operation carried out by a driver that there is a possibility of a contact prior to a case in which it is

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predicted, on the basis of the correlation between the vehicle and the object, which is calculated by the correlation calculating unit, that there is a possibility of a contact therebetween (See, detection method of Midorikawa ('220) in particular Fig. 44, Elements 90,91 of Midorikawa).

14. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of JP 2002-302026, JP 2000-006759, and Midorikawa as applied to claims 1, 4-5, and 8-9 above, and further in view of McFarland et al. (U.S. 6,701,849 B2). The combination of JP 2002-302026, JP 2000-006759, and Midorikawa, discloses all of the limitations of claim 10, except for the limitation of actuating the airbag devices when the collision sensor detects a collision of the vehicle. McFarland teaches actuating an airbag device (14) when the collision sensor (16) detects a collision of the vehicle. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the combination of JP 2002-302026, JP 2000-006759, and Midorikawa, to utilize an airbag devices when the collision sensor detects a collision of the vehicle, in view of the teachings of McFarland, since doing so would be motivated by the desire to provide an additional protection means so as to better protect the occupants in the event that the other safety /warning devices fail to prevent a collision.

Response to Arguments

15. Applicant's arguments with respect to claims 1,4-8, and 10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy D. Wilhelm whose telephone number is 571-272-6980. The examiner can normally be reached on 9:00 AM to 5:30 PM Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on 571-272-7742. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Timothy D Wilhelm
Examiner
Art Unit 3616

/Timothy D Wilhelm/
October 26, 2009

/Paul N. Dickson/
Supervisory Patent Examiner, Art Unit 3616